



Remedial Investigation / Feasibility Study

Progress Report #20
June 2018

July 24, 2018

Prepared for:
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- A. Project Schedule

1. Introduction

This Progress Report (Report) prepared by Roux Environmental Engineering and Geology, D.P.C. (Roux) presents a summary of activities completed during the period of June 2018, on behalf of Columbia Falls Aluminum Company, LLC (CFAC), for the Remedial Investigation / Feasibility Study (RI/FS) being performed at the Anaconda Aluminum Co. Columbia Falls Reduction Plant (a/k/a Columbia Falls Aluminum Plant) generally located near Columbia Falls in Flathead County, Montana ("Site"). The RI/FS is being conducted pursuant to the Administrative Settlement Agreement and Order on Consent (AOC) dated November 30, 2015 between CFAC and the United States Environmental Protection Agency (USEPA) (CERCLA Docket No. 08-2016-0002).

This Report provides a description of the actions that have been taken to comply with the AOC during the reporting period and describes work planned for the upcoming reporting period, including an updated project schedule as Appendix A. This report also provides updates regarding the availability of any new, validated sampling data received by CFAC during the reporting period. Lastly, this Report provides an update on any scope revisions and/or project delays encountered and solutions implemented to address any changes.

2. Work Completed

This Section provides a summary of activities completed or ongoing in June 2018.

2.1 Submittal of Revised Baseline Risk Assessment Work Plans

As described in prior progress reports, the draft Baseline Human Health Risk Assessment Work Plan (BHHRA WP) and Baseline Ecological Risk Assessment Work Plan (BERA WP) were revised to incorporate the multiple rounds of comments from USEPA and Montana Department of Environmental Quality (MDEQ); and Roux submitted the revised BHHRA WP and the BERA WP in red-line tracked changes to USEPA/MDEQ on May 25, 2018. Roux will finalize the work plans pending approval from USEPA in the next reporting period.

2.2 Submittal of Draft Background Sampling and Analysis Plan

CFAC/Roux submitted the Draft Background Investigation Sampling and Analysis Plan (Background SAP) to USEPA/MDEQ for review on May 25, 2018. USEPA provided comments on the surface water sampling scope of the Background SAP via e-mail correspondence on May 31, 2018. Comments on the surface water sampling scope were expedited in an effort to resolve the comments and complete the first round of background sampling during the high-water season. CFAC/Roux and USEPA/MDEQ held a conference call on June 1, 2018 to discuss the proposed response to USEPA comments on the surface water scope. Responses based on those discussions were submitted to USEPA on June 5, 2018. CFAC/Roux received conditional approval from USEPA via e-mail on June 6, 2018 to proceed with the high-water sampling while still preparing comments for the soil scope of work.

CFAC/Roux received comments provided by USEPA and CDM Smith on June 15, 2018, regarding the entire Background SAP (including the high-water and soil scope of work comments). CFAC/Roux began preparing responses to the comments in June 2018 and a conference call was scheduled with USEPA/MDEQ on July 10, 2018 to discuss the soil responses. Based upon the outcome of the conference call, CFAC/Roux will submit additional responses to USEPA comments and, following USEPA concurrence, will revise the Background SAP for USEPA approval.

2.3 Phase II Site Characterization Field Activities

This section describes the Phase II Site Characterization field activities that were completed during the reporting period of June 2018. All field locations, sample intervals, and selected analyses were completed in accordance with the Phase II SAP and Field Modifications #1, #2, and #3. Following the completion of the activities described below, Roux and their subcontractor Hydrometrics Inc. (Hydrometrics) demobilized from the Site.

2.3.1 Soil Borings and Soil Sampling

Roux and their subcontractor Hydrometrics completed 84 soil borings from June 9, 2018 through June 29, 2018. Soil borings were completed utilizing hand tools (i.e. hand auger). A total of 163 soil samples were collected by Roux and Hydrometrics field personnel from soil boring locations in June 2018. All soil samples were sent to their respective laboratories for analysis as outlined in the SAP. Table 1 provides a summary of the soil borings completed and the associated soil samples collected. Final boring logs for each soil boring and field forms for soil samples will be provided in the Phase II Site Characterization Data Summary Report.

2.3.2 Monitoring Well Gauging and Sampling

Roux completed water-level gauging of Site-wide monitoring wells on June 4 and June 5, 2018. Groundwater levels in 72 monitoring wells and five former production wells were measured with an electronic water-level meter capable of measuring fluid elevation with an accuracy of 0.01 feet. Prior to this June water-level gauging event, the production wells were not measured as part of the ongoing RI/FS since historic pumps were still installed in the well, making the well inaccessible for sampling. The pumps were removed from the wells in the late summer of 2017, and the former production wells were added to the monitoring network.

During monitoring well gauging, Roux identified food grade lubricating oil in former production wells CFMW-036 and CFMW-062 (formerly known as production wells W1-PW7 and W1-PW6, respectively), located north of the Flathead River. Roux notified USEPA of this observation verbally and via e-mail on June 18, 2018, and proposed a plan to evacuate the oil and sample the groundwater. USEPA provided concurrence with the approach on June 25, 2018, and Roux sampled the production wells.

Roux and Hydrometrics completed groundwater sampling at 76 well locations from June 6, 2018 through June 26, 2018. Groundwater samples were collected from eight new monitoring wells installed during Phase II field activities, 44 monitoring well locations installed during Phase I field activities, 19 existing wells, and five former production wells. A groundwater sample was unable to be collected from existing monitoring well, CFMW-025, due to an insufficient volume of water in the well casing during the sampling event.

Groundwater samples were collected using the methods described in *Ground Water Sampling Procedure, Low Stress (Low Flow) Purging and Sampling* (USEPA, 2010). During purging, a water quality meter was used to monitor water quality indicator parameters including pH, conductivity, dissolved oxygen (DO), oxygen reduction potential (ORP), temperature, and turbidity. The field parameters were recorded on monitoring well sampling datasheets and will be submitted with the Phase II Site Characterization Data Summary Report.

All groundwater samples collected were sent to TestAmerica and analyzed for the parameters described in the Phase II SAP. The groundwater samples collected are summarized in Table 2. Results of the groundwater sampling activities will be provided in the Phase II Site Characterization Data Summary Report.

2.3.3 Surface Water, Sediment, and Porewater Sampling

Surface water sampling was completed at 58 locations within the Flathead River, Backwater Seep Sampling Area, Cedar Creek, Cedar Creek Reservoir Overflow, Northern Surface Water Feature, and South Percolation Ponds from June 6, 2018 through June 22, 2018. Samples were unable to be collected from six locations in the North-West Percolation Pond and the North-East Percolation Pond due to insufficient water in those features during the sampling event. Sediment and porewater sampling was also completed at 10 locations within Northern Surface Water Feature. Surface water, sediment, and porewater samples were collected in accordance with the Phase II SAP. All samples were sent to TestAmerica for analysis of parameters specified in the Phase II SAP. Surface water, sediment, and porewater samples collected are summarized in Table 3. Results of the surface water, sediment, and porewater sampling will be presented in the Phase II Site Characterization Data Summary Report.

Additionally, as part of the high-water surface water sampling, the discharge of Cedar Creek and Cedar Creek Drainage Overflow were measured utilizing a mechanical current-meter method in accordance with Roux SOP 6.7. Discharge will be evaluated as part of the Phase II Site Characterization Data Summary Report.

2.3.4 Background Sampling

Background surface water sampling was completed at 20 locations within the Flathead River background reference area and Cedar Creek background reference area from June 7, 2018 through June 22, 2018. Surface water samples were collected in accordance with the draft Background SAP and Roux's/CFAC's responses to USEPA comments on draft Background SAP. All samples were sent to TestAmerica for analysis of parameters specified in the Background SAP. Background surface water samples collected are summarized in Table 3. Results of the background surface water sampling will be presented in the Phase II Site Characterization Summary Report.

Additionally, the discharge of the Cedar Creek background reference area was measured utilizing a mechanical current-meter method in accordance with Roux SOP 6.7. Discharge will be evaluated as part of the Phase II Site Characterization Data Summary Report.

2.4 Field Modifications

Two field modifications were submitted to USEPA in June 2018 summarizing changes to the Phase II SAP. Prior to implementation, verbal concurrence to proceed with the modifications was provided by USEPA. The field modifications included the following information:

- Modification #2 (June 15, 2018) – Select Phase II soil borings and additional proposed soil borings will be analyzed for polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) in surficial and shallow soils.
- Modification #3 (June 15, 2018) – Select Phase II soil borings and additional proposed soil borings will be analyzed for total chromium and hexavalent chromium (Cr[VI]) in surficial and shallow soils.

Roux received comments from USEPA for Modification #2 and Modification #3 on June 21, 2018. CFAC/Roux are preparing responses to be submitted in the next reporting period.

2.5 Investigation Derived Waste

Investigation derived waste (IDW) generated during the Phase II Site Characterization field activities are being managed in accordance with the IDW Management Plan dated May 9, 2016 and the AOC.

Soil generated during the Phase II Site Characterization was stored in a 25-yard soil container (roll-off) at the Site. Two waste characterization soil samples were collected from soil stored in the IDW roll-off and a 55-gallon drum following the completion of the soil boring advancement. Sample results from the soil IDW waste characterization samples indicated that soils were non-hazardous. Roux provided the two sample results to the USEPA and to the Section Manager for Washington State Ecology's Waste 2 Resources Program on June 21, 2018. Disposal of soil IDW associated with the two samples is scheduled for July 2018. One, 25-yard soil container is scheduled for delivery to Waste Management Graham Road Recycling and Disposal, 1820 S. Graham Road Medical Lake, WA 99022. Transport of the containers is being managed by Cascade Drilling, LP. IDW manifests will be included in the Phase II Site Characterization Data Summary Report.

2.6 South Percolation Ponds Expedited Risk Assessment

As documented in prior progress reports, CFAC/Roux proposed an expedited risk assessment of the South Percolation Pond Area in a letter to the USEPA dated September 6, 2017 and a subsequent Expedited Risk Assessment Sampling and Analysis Plan (Expedited Risk Assessment SAP) dated October 20, 2017.

The objective of the expedited risk assessment was to develop a better understanding of environmental conditions in the South Percolation Pond Area, and any human health or ecological risks that may be associated with its current condition, on an expedited time frame due to the upcoming high-water conditions because the full baseline risk assessment as part of the RI/FS will not be completed until mid-2019 at the earliest.

As described in the Expedited Risk Assessment SAP, CFAC/Roux proposed to submit a technical memorandum to USEPA documenting the results of the expedited risk assessment; and following USEPA approval, this deliverable was subsequently added to the project schedule included with the monthly progress reports. However, based upon the current status of the project and progression of the overall risk assessment, CFAC/Roux proposed to USEPA via e-mail on June 29, 2018 to address the risk assessment for the South Percolation Ponds Area as part of the overall BHHRA and BERA for the Site, rather than submit a separate technical memorandum. A response from USEPA is pending.

2.7 Weekly Reporting, Project Conference Calls, and Project Meetings

Project conference calls will continue to be conducted throughout implementation of the Phase II Site Characterization to discuss project progress and schedule. Additionally, weekly reports were submitted on June 4, 2018, June 11, 2018, June 18, 2018, and June 25, 2018 during field and activities, and will continue to be submitted to USEPA during future field activities.

As discussed in Section 2.2, a conference call was held with the project team on June 1, 2018 to discuss the responses to USEPA comments on the surface water scope of the Background SAP. A second conference call is scheduled for July 10, 2018 to discuss additional responses to USEPA comments on the Background SAP.

3. Work Planned for Next Reporting Period

This section summarizes the work planned for the next reporting period of July 2018.

3.1 Baseline Risk Assessment Work Plans

As described in Section 2.1, the BERA WP and BHHRA WP were revised to incorporate the multiple rounds of comments and Roux submitted the work plans in red-line tracked changes to USEPA/MDEQ on May 25, 2018. CFAC/Roux will finalize the work plans pending approval from USEPA in the next reporting period(s), pending receipt of additional comments from USEPA/MDEQ.

3.2 Background Sampling and Analysis Plan

As described in Section 2.2, CFAC/Roux received comments provided by USEPA and CDM Smith on June 15, 2018, regarding the entire Background SAP (including the high-water and soil scope of work comments). CFAC/Roux began preparing responses to the comments in June 2018 and a conference call is scheduled with USEPA/MDEQ on July 10, 2018 to discuss the responses. Based upon the outcome of the conference call, CFAC/Roux will submit additional responses to USEPA comments and, following USEPA concurrence, will revise the Background SAP for USEPA approval.

3.3 Phase II Site Characterization Field Activities

Phase II Site Characterization field activities will recommence in fall 2018 during the low-water season. Surface water, sediment, and porewater samples will be collected from select surface water features at the Site. In addition, Roux will continue completing onsite Phase II soil borings with hand tools and collecting soil samples.

Background soil samples are also proposed to be collected in fall 2018, pending the approval of the draft Background SAP.

3.4 Investigation Derived Waste

Disposal of soil IDW is scheduled for July 2018. One, 25-yard soil roll-off is scheduled for delivery to Waste Management Graham Road Recycling and Disposal, 1820 S. Graham Road Medical Lake, WA 99022. Transport of the containers is being managed by Cascade Drilling, LP. IDW manifests will be included in the Phase II Site Characterization Data Summary Report.

4. Database Updates

Validation of laboratory data from the Phase II Site Characterization will be performed by Laboratory Data Consultants (LDC) as a subcontractor to Roux. In June 2018, LDC provided twelve (12) sets of validated analytical data to Roux. Validated data will be uploaded to the CFAC RI/FS database in the next reporting period by Roux.

Validated data will continue to be imported into the project database and managed in accordance with the data management procedures outlined in Section 7.10 of the Phase II SAP. Future progress reports will discuss updates to the project database.


5. Scope/Schedule Revisions

An updated project schedule is attached to this Progress Report in Appendix A. The schedule was updated to reflect progress based on RI/FS activities completed through June 2018. A schedule for the Phase II Site Characterization was included in the Phase II SAP and will be provided to USEPA routinely throughout the RI/FS in future progress reports.

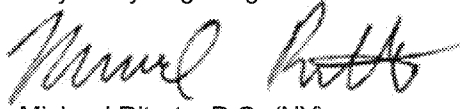
On behalf of CFAC, Roux will continue to pursue the overall objectives described in the AOC and the RI/FS Work Plan. Roux will continue to inform the USEPA of completed and upcoming activities pursuant to the requirements of the AOC in future progress reports.

Respectfully submitted,

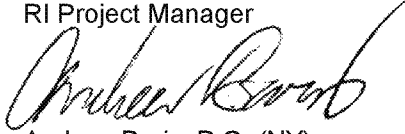
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TABLES

1. Phase II Site Characterization Soil Samples Collected through June 2018
2. Phase II Site Characterization Groundwater Samples Collected through June 2018
3. Phase II Site Characterization Surface Water, Sediment, and Porewater Samples Collected through June 2018

Table 1. Phase II Site Characterization Soil Samples Collected through June 2018
Phase II Site Characterization, Columbia Falls Aluminum Company, Montana

Location ID	Date Sampled	Surface (0-0.5 ft bls)	Shallow (0.5-2 ft bls)	Intermediate (6-8 ft bls)	Intermediate (10-12 ft bls)	Deep (15-17 ft bls)	Deep (20-22 ft bls)	Above Water Table (Interval Varies)	In Screened Interval (Interval Varies)
CFISS-001	5/23/2018	X	X						
CFISS-003	5/22/2018	X	X						
CFISS-004	5/19/2018	X	X						
CFISS-005	5/22/2018	X	X						
CFISS-007	5/17/2018	X	X						
CFISS-009	5/21/2018	X	X						
CFISS-010	5/21/2018	X	X						
CFISS-011	5/19/2018	X	X						
CFISS-012	5/18/2018	X	X						
CFISS-013	5/17/2018	X	X						
CFISS-014	5/16/2018	X	X						
CFISS-015	5/15/2018	X	X						
CFISS-REP01-SO	5/15/2018	X	X						
CFISS-REP02-SO	5/15/2018	X	X						
CFISS-REP03-SO	5/15/2018	X	X						
CFISS-REP04-SO	5/15/2018	X	X						
CFISS-REP05-SO	5/19/2018	X	X						
CFISS-REP06-SO	5/19/2018	X	X						
CFISS-REP07-SO	5/19/2018	X	X						
CFISS-REP08-SO	5/19/2018	X	X						
CFISS-REP09-SO	5/19/2018	X	X						
CFISS-REP10-SO	5/19/2018	X	X						
CFISS-REP11-SO	5/19/2018	X	X						
CFISS-REP12-SO	5/19/2018	X	X						
CFISS-REP13-SO	5/23/2018	X	X						
CFISS-REP14-SO	5/23/2018	X	X						
CFISS-REP15-SO	5/23/2018	X	X						
CFISS-REP16-SO	5/23/2018	X	X						
CFLP-001	5/5/2018	X	X						

Table 1. Phase II Site Characterization Soil Samples Collected through June 2018
Phase II Site Characterization, Columbia Falls Aluminum Company, Montana

Location ID	Date Sampled	Surface (0-0.5 ft bls)	Shallow (0.5-2 ft bls)	Intermediate (6-8 ft bls)	Intermediate (10-12 ft bls)	Deep (15-17 ft bls)	Deep (20-22 ft bls)	Above Water Table (Interval Varies)	In Screened Interval (Interval Varies)
CFLP-002	5/5/2018	X	X						
CFLP-003	5/5/2018	X	X						
CFLP-004	5/5/2018	X	X						
CFLP-005	5/5/2018	X	X						
CFLP-006	5/5/2018	X	X						
CFLP-007	6/9/2018	X	X						
CFLP-008	6/9/2018	X	X						
CFLP-009	6/9/2018	X	X						
CFLP-010	6/9/2018	X	X						
CFLP-011	6/9/2018	X	X						
CFLP-012	6/9/2018	X	X						
CFLP-013	6/9/2018	X	X						
CFLP-014	6/9/2018	X	X						
CFLP-015	6/16/2018	X	X						
CFLP-016	6/16/2018	X	X						
CFLP-017	6/16/2018	X	X						
CFLP-018	6/16/2018	X	X						
CFMW-057b	5/7/2018							X (28-30)	X (35-37)
CFMW-065	5/2/2018	X	X		X			X (25-27)	X (30-32)
CFMW-067	5/1/2018	X	X		X			X (23-25)	X (30-33)
CFMW-068	5/10/2018	X	X		X			X (73-75)	X (78-80)
CFMW-069	5/8/2018	X	X		X			X (43-45)	X (51-53)
CFMW-070	5/16/2018	X	X		X			X (48-50)	X (55-57)
CFMW-071	5/3/2018	X	X		X				
CFMW-071	5/5/2018							X (93-95)	X (98-100)
CFSB-154	5/15/2018		X (0.5-2.5)	X (5.5-7.5)	X (10.5-12.5)				
CFSB-155	5/15/2018		X (0.5-2.5)	X (5.5-7.5)	X (10.5-12.5)				
CFSB-156	5/15/2018		X (0.5-2.5)	X (5.5-7.5)	X (10.5-12.5)				
CFSB-157	5/12/2018		X (0.5-2.5)	X (5.5-7.5)	X (10.5-12.5)				

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Location ID	Date Sampled	Surface (0-0.5 ft bls)	Shallow (0.5-2 ft bls)	Intermediate (6-8 ft bls)	Intermediate (10-12 ft bls)	Deep (15-17 ft bls)	Deep (20-22 ft bls)	Above Water Table (Interval Varies)	In Screened Interval (Interval Varies)
CFSB-158	5/12/2018		X (0.5-2.5)	X (5.5-7.5)	X (10.5-12.5)				
CFSB-159	5/11/2018				X (12-14)	X (17-19)	X (22-24)		
CFSB-160	5/11/2018				X (12-14)	X (17-19)	X (22-24)		
CFSB-161	5/12/2018		X (0.5-2.5)	X (5.5-7.5)	X (12.5-14.5)				
CFSB-162	5/12/2018		X (0.5-2.5)	X (5.5-7.5)	X (10.5-12.5)				
CFSB-163	5/14/2018				X (12-14)	X (17-19)	X (23-25)		
CFSB-164	5/14/2018				X (12-14)	X (17-19)	X (22-24)		
CFSB-165	5/14/2018				X (12-14)	X (17-19)	X (23-25)		
CFSB-166	5/14/2018				X (12-14)	X (17-19)	X (22-24)		
CFSB-167	5/15/2018		X (1-3)	X		X			
CFSB-168	6/27/2018	X	X						
CFSB-169	6/27/2018	X	X						
CFSB-170	6/27/2018	X	X						
CFSB-171	6/27/2018	X	X						
CFSB-172	6/27/2018	X	X						
CFSB-173	6/25/2018	X	X						
CFSB-174	6/25/2018	X	X						
CFSB-175	6/25/2018	X	X						
CFSB-176	6/16/2018	X	X						
CFSB-177	6/25/2018	X	X						
CFSB-178	6/25/2018	X	X						
CFSB-179	6/25/2018	X	X						
CFSB-180	6/25/2018	X	X						
CFSB-181	6/26/2018	X	X						
CFSB-182	6/26/2018	X	X						
CFSB-183	6/26/2018	X	X						
CFSB-184	6/26/2018	X	X						
CFSB-185	6/26/2018	X	X						
CFSB-186	6/26/2018	X	X						

Table 1. Phase II Site Characterization Soil Samples Collected through June 2018
Phase II Site Characterization, Columbia Falls Aluminum Company, Montana

Location ID	Date Sampled	Surface (0-0.5 ft bls)	Shallow (0.5-2 ft bls)	Intermediate (6-8 ft bls)	Intermediate (10-12 ft bls)	Deep (15-17 ft bls)	Deep (20-22 ft bls)	Above Water Table (Interval Varies)	In Screened Interval (Interval Varies)
CFSB-187	6/27/2018	X	X						
CFSB-188	6/27/2018	X	X						
CFSB-189	6/27/2018	X	X						
CFSB-190	6/27/2018	X	X						
CFSB-191	6/22/2018	X	X						
CFSB-192	6/22/2018	X	X						
CFSB-193	6/27/2018	X	X						
CFSB-194	6/27/2018	X	X						
CFSB-195	6/27/2018	X	X						
CFSB-196	6/27/2018	X	X						
CFSB-197	6/21/2018	X	X						
CFSB-198	6/21/2018	X	X						
CFSB-199	6/28/2018	X	X						
CFSB-200	6/28/2018	X	X						
CFSB-201	6/22/2018	X	X						
CFSB-201	6/29/2018	X							
CFSB-202	6/22/2018	X	X						
CFSB-202	6/29/2018	X							
CFSB-203	6/28/2018	X	X						
CFSB-204	6/22/2018	X	X						
CFSB-205	6/27/2018	X	X						
CFSB-206	6/22/2018	X	X						
CFSB-209	6/26/2018	X	X						
CFSB-210	6/26/2018	X	X						
CFSB-211	6/26/2018	X	X						
CFSB-212	6/26/2018	X	X						
CFSB-213	6/22/2018	X	X						
CFSB-214	6/22/2018	X	X						
CFSB-215	6/21/2018	X	X						

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Phase II Site Characterization, Columbia Falls Aluminum Company, Montana

Location ID	Date Sampled	Surface (0-0.5 ft bls)	Shallow (0.5-2 ft bls)	Intermediate (6-8 ft bls)	Intermediate (10-12 ft bls)	Deep (15-17 ft bls)	Deep (20-22 ft bls)	Above Water Table (Interval Varies)	In Screened Interval (Interval Varies)
CFSB-216	6/21/2018	X	X						
CFSB-217	6/21/2018	X	X						
CFSB-218	6/21/2018	X	X						
CFSB-219	6/16/2018	X	X						
CFSB-220	6/22/2018	X	X						
CFSB-221	5/7/2018	X	X						
CFSB-221A	6/28/2018	X	X						
CFSB-222	5/7/2018	X	X						
CFSB-223	5/7/2018	X	X						
CFSB-224	5/7/2018	X	X						
CFSB-225	5/7/2018	X	X						
CFSB-226	5/7/2018	X	X						
CFSB-227	5/7/2018	X	X						
CFSB-228	5/7/2018	X	X						
CFSB-229	5/7/2018	X	X						
CFSB-230	5/7/2018	X	X						
CFSB-237	6/21/2018	X	X						
CFSB-238	6/27/2018	X	X						
CFSB-239	6/27/2018	X	X						
CFSB-240	5/10/2018	X	X		X				
CFSB-241	5/5/2018	X	X		X				
CFSB-242	5/10/2018	X	X		X				
CFSB-243	5/10/2018	X	X		X				
CFSB-244	5/9/2018	X	X		X	X			
CFSB-245	5/8/2018	X	X		X				
CFSB-246	5/9/2018	X	X		X				
CFSB-247	5/9/2018	X	X		X				
CFSB-248	5/1/2018	X	X		X				
CFSB-249	5/1/2018	X	X		X				

Table 1. Phase II Site Characterization Soil Samples Collected through June 2018
Phase II Site Characterization, Columbia Falls Aluminum Company, Montana

Location ID	Date Sampled	Surface (0-0.5 ft bls)	Shallow (0.5-2 ft bls)	Intermediate (6-8 ft bls)	Intermediate (10-12 ft bls)	Deep (15-17 ft bls)	Deep (20-22 ft bls)	Above Water Table (Interval Varies)	In Screened Interval (Interval Varies)
CFSB-250	5/1/2018	X	X		X				
CFSB-251	5/1/2018	X	X		X				
CFSB-252	5/1/2018	X	X		X				
CFSB-253	5/1/2018	X	X		X				
CFSB-260	5/5/2018	X	X		X				
CFSB-261	5/2/2018	X	X		X				
CFSB-262	5/2/2018	X	X	X	X				
CFSB-263	5/2/2018	X	X	X	X				
CFSB-264	5/3/2018	X	X	X	X				
CFSB-265	5/3/2018	X	X	X	X				
CFSB-266	5/10/2018	X	X		X				
CFSB-267	5/10/2018	X	X		X				
CFSB-268	5/10/2018	X	X		X				
CFSB-269	5/9/2018	X	X		X				
CFSB-270	5/2/2018	X	X	X	X				
CFSB-271	5/2/2018	X	X		X				
CFSB-272	5/4/2018	X	X	X	X	X	X		
CFSB-272	6/28/2018	X	X						
CFSB-273	5/4/2018	X	X	X	X	X	X		
CFSB-273	6/22/2018	X	X						
CFSB-274	5/11/2018	X	X	X	X	X	X		
CFSB-275	5/11/2018	X	X	X	X	X	X		
CFSB-276	5/11/2018	X	X	X	X	X	X		
CFSB-277	5/3/2018	X	X	X	X	X	X		
CFSB-278	5/11/2018	X	X	X	X	X	X		
CFSB-279	5/8/2018	X	X	X	X	X			
CFSB-279	5/19/2018						X		
CFSB-279	6/22/2018	X	X						
CFSB-280	5/8/2018	X	X	X					

Table 1. Phase II Site Characterization Soil Samples Collected through June 2018
Phase II Site Characterization, Columbia Falls Aluminum Company, Montana

Location ID	Date Sampled	Surface (0-0.5 ft bls)	Shallow (0.5-2 ft bls)	Intermediate (6-8 ft bls)	Intermediate (10-12 ft bls)	Deep (15-17 ft bls)	Deep (20-22 ft bls)	Above Water Table (Interval Varies)	In Screened Interval (Interval Varies)
CFSB-280	5/19/2018				X	X	X		
CFSB-280	6/22/2018	X	X						
CFSB-281	5/4/2018	X	X	X	X	X	X		
CFSB-281	6/22/2018	X	X						
CFSB-282	6/16/2018	X							
CFSB-283	6/16/2018	X							
CFSB-284	6/16/2018	X							
CFSB-285	5/11/2018				X (12-14)	X (17-19)	X (22-24)		
CFSB-287	5/18/2018			X (8-10)	X (17-19)	X (20-22)	X (22-24)	X (30-32)	X (45-47)
CFSB-288	6/28/2018	X	X						
CFSB-289	6/28/2018	X	X						
CFSB-290	6/28/2018	X	X						
CFSB-291	6/22/2018	X	X						
CFSB-292	6/22/2018	X	X						
CFSB-293	6/27/2018	X	X						
CFSB-294	6/27/2018	X	X						

Table 2. Phase II Site Characterization Groundwater Samples Collected through June 2018
Phase II Site Characterization, Columbia Falls Aluminum Company, Montana

Proposed Location ID	Location Type	Screen Type	Field Sample ID	Date Completed	Notes
CFMW-001	Upper Unit	Water Table Monitoring Well	CFMW-001-GW	6/12/2018	
CFMW-002	Upper Unit	Water Table Monitoring Well	CFMW-002-GW	6/11/2018	
CFMW-003	Upper Unit	Water Table Monitoring Well	CFMW-003-GW	6/13/2018	
CFMW-003a	Below Upper Unit	Deep Monitoring Well	CFMW-003a-GW	6/15/2018	
CFMW-007	Upper Unit	Water Table Monitoring Well	CFMW-007-GW	6/11/2018	
CFMW-008	Upper Unit	Water Table Monitoring Well	CFMW-008-GW	6/14/2018	
CFMW-008a	Upper Unit	Deep Monitoring Well	CFMW-008a-GW	6/18/2018	
CFMW-010	Upper Unit	Water Table Monitoring Well	CFMW-010-GW	6/11/2018	
CFMW-011	Upper Unit	Water Table Monitoring Well	CFMW-011-GW	6/7/2018	
CFMW-011a	Below Upper Unit	Deep Monitoring Well	CFMW-011a-GW	6/14/2018	
CFMW-012	Upper Unit	Water Table Monitoring Well	CFMW-012-GW	6/8/2018	
CFMW-012a	Below Upper Unit	Deep Monitoring Well	CFMW-012a-GW	6/11/2018	
CFMW-014	Upper Unit	Water Table Monitoring Well	CFMW-014-GW	6/11/2018	
CFMW-015	Upper Unit	Water Table Monitoring Well	CFMW-015-GW	6/11/2018	
CFMW-016	Upper Unit	Water Table Monitoring Well	CFMW-016-GW	6/15/2018	
CFMW-016a	Upper Unit	Deep Monitoring Well	CFMW-016a-GW	6/12/2018	
CFMW-017	Upper Unit	Water Table Monitoring Well	CFMW-017-GW	6/6/2018	
CFMW-018	Upper Unit	Water Table Monitoring Well	CFMW-018-GW	6/18/2018	
CFMW-019	Upper Unit	Water Table Monitoring Well	CFMW-019-GW	6/14/2018	
CFMW-019a	Below Upper Unit	Deep Monitoring Well	CFMW-019a-GW	6/19/2018	
CFMW-020	Upper Unit	Water Table Monitoring Well	CFMW-020-GW	6/8/2018	
CFMW-021	Upper Unit	Water Table Monitoring Well	CFMW-021-GW	6/7/2018	
CFMW-022	Upper Unit	Water Table Monitoring Well	CFMW-022-GW	6/7/2018	
CFMW-023	Upper Unit	Water Table Monitoring Well	CFMW-023-GW	6/6/2018	
CFMW-025	Upper Unit	Water Table Monitoring Well	DRY	DRY	Not sampled due to insufficient water in the well
CFMW-025a	Below Upper Unit	Deep Monitoring Well	CFMW-025a-GW	6/7/2018	
CFMW-025b	Upper Unit	Water Table Monitoring Well	CFMW-25b-GW	6/6/2018	
CFMW-026	Upper Unit	Water Table Monitoring Well	CFMW-026-GW	6/6/2018	
CFMW-027	Upper Unit	Water Table Monitoring Well	CFMW-027-GW	6/13/2018	
CFMW-028	Upper Unit	Water Table Monitoring Well	CFMW-028-GW	6/14/2018	
CFMW-028a	Upper Unit	Deep Monitoring Well	CFMW-028a-GW	6/7/2018	

Table 2. Phase II Site Characterization Groundwater Samples Collected through June 2018
Phase II Site Characterization, Columbia Falls Aluminum Company, Montana

Proposed Location ID	Location Type	Screen Type	Field Sample ID	Date Completed	Notes
CFMW-029	Upper Unit	Water Table Monitoring Well	CFMW-029-GW	6/8/2018	
CFMW-031	Upper Unit	Water Table Monitoring Well	CFMW-031-GW	6/15/2018	
CFMW-032	Upper Unit	Water Table Monitoring Well	CFMW-032-GW	6/15/2018	
CFMW-032a	Below Upper Unit	Deep Monitoring Well	CFMW-032a-GW	6/14/2018	
CFMW-033	Upper Unit	Water Table Monitoring Well	CFMW-033-GW	6/15/2018	
CFMW-034	Upper Unit	Water Table Monitoring Well	CFMW-034-GW	6/15/2018	
CFMW-035	Upper Unit	Water Table Monitoring Well	CFMW-035-GW	6/15/2018	
CFMW-036	Production Well	Former Production Well	CFMW-036-GW	6/25/2018	
CFMW-037	Upper Unit	Water Table Monitoring Well	CFMW-037-GW	6/18/2018	
CFMW-038	Upper Unit	Water Table Monitoring Well	CFMW-038-GW	6/8/2018	
CFMW-040	Upper Unit	Water Table Monitoring Well	CFMW-040-GW	6/8/2018	
CFMW-042	Upper Unit	Water Table Monitoring Well	CFMW-042-GW	6/12/2018	
CFMW-043	Upper Unit	Water Table Monitoring Well	CFMW-043-GW	6/11/2018	
CFMW-044	Upper Unit	Water Table Monitoring Well	CFMW-044-GW	6/11/2018	
CFMW-044a	Upper Unit	Deep Monitoring Well	CFMW-044a-GW	6/7/2018	
CFMW-044b	Below Upper Unit	Deep Monitoring Well	CFMW-044b-GW	6/14/2018	
CFMW-045	Upper Unit	Water Table Monitoring Well	CFMW-045-GW	6/18/2018	
CFMW-045a	Upper Unit	Deep Monitoring Well	CFMW-045a-GW	6/13/2018	
CFMW-047	Upper Unit	Water Table Monitoring Well	CFMW-047-GW	6/8/2018	
CFMW-048	Production Well	Former Production Well	CFMW-048-GW	6/20/2018	
CFMW-049	Upper Unit	Water Table Monitoring Well	CFMW-049-GW	6/7/2018	
CFMW-049a	Upper Unit	Deep Monitoring Well	CFMW-049a-GW	6/13/2018	
CFMW-050	Upper Unit	Water Table Monitoring Well	CFMW-050-GW	6/8/2018	
CFMW-051	Production Well	Former Production Well	CFMW-051-GW	6/20/2018	
CFMW-052	Production Well	Former Production Well	CFMW-052-GW	6/21/2018	
CFMW-053	Upper Unit	Water Table Monitoring Well	CFMW-053-GW	6/18/2018	
CFMW-053a	Below Upper Unit	Deep Monitoring Well	CFMW-053a-GW	6/13/2018	
CFMW-054	Upper Unit	Water Table Monitoring Well	CFMW-054-GW	6/18/2018	
CFMW-056	Below Upper Unit	Deep Monitoring Well	CFMW-056-GW	6/12/2018	
CFMW-056a	Below Upper Unit	Deep Monitoring Well	CFMW-056a-GW	6/12/2018	
CFMW-056b	Upper Unit	Water Table Monitoring Well	CFMW-056b-GW	6/14/2018	

Table 2. Phase II Site Characterization Groundwater Samples Collected through June 2018
Phase II Site Characterization, Columbia Falls Aluminum Company, Montana

Proposed Location ID	Location Type	Screen Type	Field Sample ID	Date Completed	Notes
CFMW-057	Below Upper Unit	Deep Monitoring Well	CFMW-057-GW	6/18/2018	
CFMW-057a	Below Upper Unit	Deep Monitoring Well	CFMW-057a-GW	6/18/2018	
CFMW-057b	Upper Unit	Water Table Monitoring Well	CFMW-057b-GW	6/12/2018	
CFMW-059	Upper Unit	Water Table Monitoring Well	CFMW-059-GW	6/12/2018	
CFMW-059a	Below Upper Unit	Deep Monitoring Well	CFMW-059a-GW	6/13/2018	
CFMW-061	Upper Unit	Water Table Monitoring Well	CFMW-061-GW	6/20/2018	
CFMW-062	Production Well	Former Production Well	CFMW-062-GW	6/26/2018	
CFMW-064	Upper Unit	Water Table Monitoring Well	CFMW-064-GW	6/20/2018	
CFMW-065	Upper Unit	Water Table Monitoring Well	CFMW-065-GW	6/14/2018	
CFMW-066	Upper Unit	Water Table Monitoring Well	CFMW-066-GW	6/13/2018	
CFMW-067	Upper Unit	Water Table Monitoring Well	CFMW-067-GW	6/13/2018	
CFMW-068	Upper Unit	Water Table Monitoring Well	CFMW-068-GW	6/12/2018	
CFMW-069	Upper Unit	Water Table Monitoring Well	CFMW-069-GW	6/14/2018	
CFMW-070	Upper Unit	Water Table Monitoring Well	CFMW-070-GW	6/18/2018	
CFMW-071	Upper Unit	Water Table Monitoring Well	CFMW-071-GW	6/12/2018	

Table 3. Phase II Site Characterization Surface Water, Sediment, and Porewater Samples Collected through June 2018
Phase II Site Characterization, Columbia Falls Aluminum Company, Montana

Proposed Location ID	Field Sample ID	Sample Type	Date Completed	Site Feature
CFSW-001	CFSWP-001-SW	Surface Water	6/7/2018	Flathead River
CFSW-002	CFSWP-002-SW	Surface Water	6/7/2018	Flathead River
CFSW-003	CFSWP-003-SW	Surface Water	6/6/2018	Backwater Seep Sampling Area
CFSW-004	CFSWP-004-SW	Surface Water	6/6/2018	Backwater Seep Sampling Area
CFSW-005	CFSWP-005-SW	Surface Water	6/6/2018	Backwater Seep Sampling Area
CFSW-006	CFSWP-006-SW	Surface Water	6/6/2018	Flathead River
CFSW-007	CFSWP-007-SW	Surface Water	6/7/2018	Flathead River
CFSW-008	CFSWP-008-SW	Surface Water	6/7/2018	Flathead River
CFSW-009	CFSWP-009-SW	Surface Water	6/14/2018	Cedar Creek Reservoir Overflow Ditch
CFSW-010	CFSWP-010-SW	Surface Water	6/14/2018	Cedar Creek Reservoir Overflow Ditch
CFSW-011	CFSWP-011-SW	Surface Water	6/14/2018	Cedar Creek Reservoir Overflow Ditch
CFSW-012	CFSWP-012-SW	Surface Water	6/14/2018	Cedar Creek Reservoir Overflow Ditch
CFSW-013	CFSWP-013-SW	Surface Water	6/14/2018	Cedar Creek Reservoir Overflow Ditch
CFSW-014	CFSWP-014-SW	Surface Water	6/11/2018	Cedar Creek
CFSW-015	CFSWP-015-SW	Surface Water	6/11/2018	Cedar Creek
CFSW-016	CFSWP-016-SW	Surface Water	6/12/2018	Cedar Creek
CFSW-017	CFSWP-017-SW	Surface Water	6/7/2018	Flathead River
CFSW-018	CFSWP-018-SW	Surface Water	6/21/2018	South Percolation Ponds
CFSW-019	CFSWP-019-SW	Surface Water	6/21/2018	South Percolation Ponds
CFSW-020	CFSWP-020-SW	Surface Water	6/21/2018	South Percolation Ponds
CFSW-021	CFSPWP-021-PW	Porewater	6/19/2018	Northern Surface Water Feature
CFSW-021	CFSDP-021-SO	Sediment	6/19/2018	Northern Surface Water Feature
CFSW-021	CFSWP-021-SW	Surface Water	6/19/2018	Northern Surface Water Feature
CFSW-022	CFSDP-022-SO	Sediment	6/20/2018	Northern Surface Water Feature
CFSW-022	CFSWP-022-SW	Surface Water	6/20/2018	Northern Surface Water Feature
CFSW-022	CFPWP-022-PW	Porewater	6/20/2018	Northern Surface Water Feature
CFSW-023	DRY	Sediment	DRY	North-West Percolation Pond
CFSW-023	DRY	Surface Water	DRY	North-West Percolation Pond
CFSW-023	DRY	Porewater	DRY	North-West Percolation Pond
CFSW-024	DRY	Sediment	DRY	North-East Percolation Pond
CFSW-024	DRY	Surface Water	DRY	North-East Percolation Pond

Table 3. Phase II Site Characterization Surface Water, Sediment, and Porewater Samples Collected through June 2018
Phase II Site Characterization, Columbia Falls Aluminum Company, Montana

Proposed Location ID	Field Sample ID	Sample Type	Date Completed	Site Feature
CFSW-024	DRY	Porewater	DRY	North-East Percolation Pond
CFSW-025	CFSWP-025-SW	Surface Water	6/12/2018	Cedar Creek
CFSW-026	CFSWP-026-SW	Surface Water	6/7/2018	Backwater Seep Sampling Area
CFSW-027	CFSWP-027-SW	Surface Water	6/6/2018	Backwater Seep Sampling Area
CFSW-028	CFSWP-028-SW	Surface Water	6/6/2018	Backwater Seep Sampling Area
CFSW-029	CFSWP-029-SW	Surface Water	6/22/2018	Backwater Seep Sampling Area
CFSW-030	CFSWP-030-SW	Surface Water	6/22/2018	South Percolation Ponds
CFSW-031	CFSWP-031-SW	Surface Water	6/22/2018	South Percolation Ponds
CFSW-032	CFSWP-032-SW	Surface Water	6/22/2018	South Percolation Ponds
CFSW-033	CFSWP-033-SW	Surface Water	6/22/2018	South Percolation Ponds
CFSW-034	CFSWP-034-SW	Surface Water	6/7/2018	Flathead River
CFSW-035	CFSWP-035-SW	Surface Water	6/7/2018	Flathead River
CFSW-036	CFSWP-036-SW	Surface Water	6/6/2018	Flathead River
CFSW-037	CFSWP-037-SW	Surface Water	6/6/2018	Flathead River
CFSW-038	CFSWP-038-SW	Surface Water	6/7/2018	Flathead River
CFSW-039	CFSWP-039-SW	Surface Water	6/15/2018	Cedar Creek Reservoir Overflow Ditch
CFSW-040	CFSWP-040-SW	Surface Water	6/15/2018	Cedar Creek Reservoir Overflow Ditch
CFSW-041	CFSWP-041-SW	Surface Water	6/14/2018	Cedar Creek Reservoir Overflow Ditch
CFSW-042	CFSWP-042-SW	Surface Water	6/14/2018	Cedar Creek Reservoir Overflow Ditch
CFSW-043	CFSWP-043-SW	Surface Water	6/14/2018	Cedar Creek Reservoir Overflow Ditch
CFSW-044	CFSWP-044-SW	Surface Water	6/11/2018	Cedar Creek
CFSW-045	CFSWP-045-SW	Surface Water	6/11/2018	Cedar Creek
CFSW-046	CFPWP-046-PW	Porewater	6/19/2018	Northern Surface Water Feature
CFSW-046	CFSDP-046-SD	Sediment	6/19/2018	Northern Surface Water Feature
CFSW-046	CFSWP-046-SW	Surface Water	6/19/2018	Northern Surface Water Feature
CFSW-047	CFPWP-047-PW	Porewater	6/19/2018	Northern Surface Water Feature
CFSW-047	CFSDP-047-SD	Sediment	6/19/2018	Northern Surface Water Feature
CFSW-047	CFSWP-047-SW	Surface Water	6/19/2018	Northern Surface Water Feature
CFSW-048	CFPWP-048-PW	Porewater	6/20/2018	Northern Surface Water Feature
CFSW-048	CFSDP-048-SD	Sediment	6/20/2018	Northern Surface Water Feature
CFSW-048	CFSWP-048-SW	Surface Water	6/20/2018	Northern Surface Water Feature

Table 3. Phase II Site Characterization Surface Water, Sediment, and Porewater Samples Collected through June 2018
Phase II Site Characterization, Columbia Falls Aluminum Company, Montana

Proposed Location ID	Field Sample ID	Sample Type	Date Completed	Site Feature
CFSW-049	CFPWP-049-PW	Porewater	6/20/2018	Northern Surface Water Feature
CFSW-049	CFSDP-049-SD	Sediment	6/20/2018	Northern Surface Water Feature
CFSW-049	CFSWP-049-SW	Surface Water	6/20/2018	Northern Surface Water Feature
CFSW-050	CFPWP-050-PW	Porewater	6/21/2018	Northern Surface Water Feature
CFSW-050	CFSDP-050-SD	Sediment	6/21/2018	Northern Surface Water Feature
CFSW-050	CFSWP-050-SW	Surface Water	6/21/2018	Northern Surface Water Feature
CFSW-051	CFPWP-051-PW	Porewater	6/21/2018	Northern Surface Water Feature
CFSW-051	CFSDP-051-SD	Sediment	6/21/2018	Northern Surface Water Feature
CFSW-051	CFSWP-051-SW	Surface Water	6/21/2018	Northern Surface Water Feature
CFSW-052	CFPWP-052-PW	Porewater	6/18/2018	Northern Surface Water Feature
CFSW-052	CFSDP-052-SD	Sediment	6/18/2018	Northern Surface Water Feature
CFSW-052	CFSWP-052-SW	Surface Water	6/18/2018	Northern Surface Water Feature
CFSW-053	CFPWP-053-PW	Porewater	6/18/2018	Northern Surface Water Feature
CFSW-053	CFSDP-053-SD	Sediment	6/18/2018	Northern Surface Water Feature
CFSW-053	CFSWP-053-SW	Surface Water	6/18/2018	Northern Surface Water Feature
CFSW-054	CFPWP-054-PW	Porewater	DRY	North-West Percolation Pond
CFSW-054	CFSDP-054-SD	Sediment	DRY	North-West Percolation Pond
CFSW-054	CFSWP-054-SW	Surface Water	DRY	North-West Percolation Pond
CFSW-055	CFPWP-055-PW	Porewater	DRY	North-West Percolation Pond
CFSW-055	CFSDP-055-SD	Sediment	DRY	North-West Percolation Pond
CFSW-055	CFSWP-055-SW	Surface Water	DRY	North-West Percolation Pond
CFSW-056	CFPWP-056-PW	Porewater	DRY	North-East Percolation Pond
CFSW-056	CFSDP-056-SD	Sediment	DRY	North-East Percolation Pond
CFSW-056	CFSWP-056-SW	Surface Water	DRY	North-East Percolation Pond
CFSW-057	CFPWP-057-PW	Porewater	DRY	North-East Percolation Pond
CFSW-057	CFSDP-057-SD	Sediment	DRY	North-East Percolation Pond
CFSW-057	CFSWP-057-SW	Surface Water	DRY	North-East Percolation Pond
CFSW-058	CFSWP-058-SW	Surface Water	6/21/2018	South Percolation Ponds
CFSW-059	CFSWP-059-SW	Surface Water	6/22/2018	South Percolation Ponds
CFSW-060	CFSWP-060-SW	Surface Water	6/22/2018	South Percolation Ponds
CFBSW-001	CFBSWP-001-SW	Surface Water	6/13/2018	Cedar Creek Background Reference Area

Table 3. Phase II Site Characterization Surface Water, Sediment, and Porewater Samples Collected through June 2018
Phase II Site Characterization, Columbia Falls Aluminum Company, Montana

Proposed Location ID	Field Sample ID	Sample Type	Date Completed	Site Feature
CFBSW-002	CFBSWP-002-SW	Surface Water	6/13/2018	Cedar Creek Background Reference Area
CFBSW-003	CFBSWP-003-SW	Surface Water	6/13/2018	Cedar Creek Background Reference Area
CFBSW-004	CFBSWP-004-SW	Surface Water	6/13/2018	Cedar Creek Background Reference Area
CFBSW-005	CFBSWP-005-SW	Surface Water	6/13/2018	Cedar Creek Background Reference Area
CFBSW-006	CFBSWP-006-SW	Surface Water	6/12/2018	Cedar Creek Background Reference Area
CFBSW-007	CFBSWP-007-SW	Surface Water	6/12/2018	Cedar Creek Background Reference Area
CFBSW-008	CFBSWP-008-SW	Surface Water	6/13/2018	Cedar Creek Background Reference Area
CFBSW-009	CFBSWP-009-SW	Surface Water	6/12/2018	Cedar Creek Background Reference Area
CFBSW-010	CFBSWP-010-SW	Surface Water	6/12/2018	Cedar Creek Background Reference Area
CFBSW-011	CFBSWP-011-SW	Surface Water	6/7/2018	Flathead River Background Reference Area
CFBSW-012	CFBSWP-012-SW	Surface Water	6/7/2018	Flathead River Background Reference Area
CFBSW-013	CFBSWP-013-SW	Surface Water	6/8/2018	Flathead River Background Reference Area
CFBSW-014	CFBSWP-014-SW	Surface Water	6/8/2018	Flathead River Background Reference Area
CFBSW-015	CFBSWP-015-SW	Surface Water	6/8/2018	Flathead River Background Reference Area
CFBSW-016	CFBSWP-016-SW	Surface Water	6/7/2018	Flathead River Background Reference Area
CFBSW-017	CFBSWP-017-SW	Surface Water	6/7/2018	Flathead River Background Reference Area
CFBSW-018	CFBSWP-018-SW	Surface Water	6/7/2018	Flathead River Background Reference Area
CFBSW-019	CFBSWP-019-SW	Surface Water	6/7/2018	Flathead River Background Reference Area
CFBSW-020	CFBSWP-020-SW	Surface Water	6/7/2018	Flathead River Background Reference Area

APPENDIX A

Project Schedule

R/R/F/S Schedule Updated June 29, 2018

ID	Deliverable/Task Name	Duration	Start	Finish	Company	Predecessors	January 2016	February 2016	March 2016	April 2016	May 2016	June 2016	July 2016	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017	February 2017	March 2017	April 2017	May 2017	June 2017	July 2017	August 2017	September 2017	October 2017	November 2017
1	AOC is executed by all parties	1 day	Mon 11/30/15	Mon 11/30/15	EPA/CFAC																								
2	Historical Records Review	160 days	Mon 2/8/16	Fri 9/16/16	Roux																								
3	X Draft Health and Safety Plan (HASP)	30 edays	Mon 11/30/15	Wed 12/30/15	Roux	1																							
4	X Final Health and Safety Plan (HASP)	25 days	Thu 12/31/15	Wed 2/3/16	Roux	3																							
5	Site is clear of Snow / Field Work Begins	1 day	Mon 4/4/16	Mon 4/4/16																									
6	Pre-Intrusive Task 1 - Site Reconnaissance	10 days	Mon 4/4/16	Fri 4/15/16	Roux	555																							
7	Pre-Intrusive Task 2 - Geophysical Survey	5 days	Mon 4/18/16	Fri 4/22/16	Roux	6																							
8	Pre-Intrusive Task 3 - Soil Gas Survey	7 days	Mon 4/18/16	Tue 4/26/16	Roux	7SS																							
9	SAP Addendum	75 days	Mon 4/18/16	Fri 7/29/16	Roux																								
10	X Draft SAP Addendum	40 days	Mon 4/18/16	Fri 6/10/16	Roux	6																							
11	EPA Review of Draft SAP Addendum	15 days	Mon 6/13/16	Fri 7/1/16	EPA	10																							
12	X Final SAP Addendum	20 days	Mon 7/4/16	Fri 7/29/16	Roux	11																							
13	Source Area Investigation - Phase I Site Characterization Field Activities	120 days	Mon 5/9/16	Fri 10/21/16	Roux/Hydrometrics																								
14	GPR Utility Mark-Outs	5 days	Mon 5/9/16	Fri 5/13/16	Roux																								
15	Clearing / Grading for Drill Rig Access	4 days	Wed 5/11/16	Mon 5/16/16	Roux																								
16	Sonic Rig 1	75 days	Mon 5/16/16	Fri 8/26/16	Roux	8FS+10 days																							
17	Sonic Rig 2	50 days	Mon 5/16/16	Fri 7/22/16	Roux	8FS+10 days																							
18	Geoprobe	20 days	Mon 5/16/16	Fri 6/10/16	Hydrometrics																								
19	Landfill GPR Survey Field Work	3 days	Mon 7/25/16	Wed 7/27/16	Roux																								
20	Test Pitting	5 days	Mon 8/15/16	Fri 8/19/16	Roux																								
21	Additional Monitoring Well redevelopment activities	10 days	Mon 10/10/16	Fri 10/21/16	Hydrometrics																								
22	Background Area Investigation	5 days	Mon 6/13/16	Fri 6/17/16	Hydrometrics	18																							
23	Operational Grid Area Investigation	30 days	Mon 6/20/16	Fri 7/29/16	Hydrometrics	22																							
24	Site-Wide Surface Water Sampling - Event 1	5 days	Mon 9/5/16	Fri 9/9/16	Roux/Hydrometrics	16FS+5 days																							
25	Site-Wide Groundwater Sampling - Event 1	15 days	Mon 9/12/16	Fri 9/30/16	Roux/Hydrometrics	24																							
26	Site-Wide Surface Water Sampling - Event 2	5 days	Mon 12/5/16	Fri 12/9/16	Roux/Hydrometrics	24SS+90 edays																							
27	Site-Wide Groundwater Sampling - Event 2	15 days	Mon 12/12/16	Fri 12/30/16	Roux/Hydrometrics	26																							
28	Site-Wide Surface Water Sampling - Event 3	5 days	Mon 3/13/17	Fri 3/17/17	Roux/Hydrometrics	27SS+90 edays																							
29	Site-Wide Groundwater Sampling - Event 3	15 days	Mon 3/20/17	Fri 4/7/17	Roux/Hydrometrics	28																							
30	Site-Wide Surface Water Sampling - Event 4	5 days	Mon 6/12/17	Fri 6/16/17	Roux/Hydrometrics	28SS+90 edays																							
31	Site-Wide Groundwater Sampling - Event 4	15 days	Mon 6/19/17	Fri 7/7/17	Roux/Hydrometrics	30																							
32	Investigation Derived Waste Management/Disposal	390 days	Mon 4/4/16	Fri 9/29/17	Roux	555																							
33	Phase 1 Site Characterization Data Summary Report	251 days	Mon 10/3/16	Mon 9/18/17	Roux																								
34	Data Validation Completion	35 days	Mon 10/3/16	Fri 11/18/16	Data Validator	25																							
35	X Draft Phase I Site Characterization Summary Report to EPA/MDEQ	71 days	Mon 11/21/16	Mon 2/27/17	Roux	34																							
36	EPA review of Draft Phase I Data Summary Report	30 days	Mon 3/6/17	Fri 4/14/17	EPA	35																							
37	X Response to EPA/MDEQ Comments on Draft Phase I Data Summary Report	100 days	Mon 4/17/17	Fri 9/1/17	Roux/EPA	36																							
38	X Final Submission of Phase I Summary Report to EPA/MDEQ	10 days	Tue 9/5/17	Mon 9/18/17	Roux	37																							
39	Screening Level Ecological Risk Assessment (SLERA)	361 days	Mon 5/2/16	Mon 9/18/17	Roux																								
40	Completion of SLERA Field Work	5 days	Mon 5/2/16	Fri 5/6/16	Roux																								
41	X Draft SLERA Summary Report	71 days	Mon 11/21/16	Mon 2/27/17	Roux	34																							
42	EPA review of Draft SLERA Report	30 days	Mon 3/6/17	Fri 4/14/17	EPA	41																							
43	X Response to EPA/MDEQ Comments on Draft SLERA Summary Report	100 days	Mon 4/17/17	Fri 9/1/17	Roux/EPA	42																							
44	X Final Submission of SLERA Report to EPA/MDEQ	10 days	Tue 9/5/17	Mon 9/18/17	Roux	43																							
45	2017 Additional Field Activities	85 days	Mon 4/17/17	Fri 8/11/17	Roux																								
46	Preparation of 2017 field activities plan/SAP Mods	30 days	Mon 4/17/17	Fri 5/26/17	Roux	36																							
47	Pneumatic Slug Testing	15 days	Mon 7/10/17	Fri 7/28/17	Roux	31																							
48	Asbestos Landfill Soil Sampling	10 days	Mon 7/31/17	Fri 8/11/17	Roux/Hydrometrics	47																							
49	Groundwater and Surface Water Sampling Data Summary Report	101 days	Mon 7/10/17	Mon 11/27/17	Roux																								
50	Validation of Round 4 sampling data	25 days	Mon 7/10/17	Fri 8/11/17	Data Validator	31																							
51	X GW/SW Summary Report to EPA/MDEQ	76 days	Mon 8/14/17	Mon 11/27/17	Roux	50																							
52	Baseline Human Health Risk Assessment Work Plan	184 days	Mon 9/18/17	Fri 6/1/18	Roux																								
53	X Draft BHHRA Work Plan to EPA/MDEQ	60 edays	Mon 9/18/17	Fri 11/17/17	Roux/EHS Support	38																							
54	EPA review of Draft BHHRA Work plan	35 days	Mon 11/20/17	Fri 1/5/18	EPA	58																							
55	X Response to EPA/MDEQ Comments on BHHRA Work Plan	70 days	Mon 1/8/18	Fri 4/13/18	Roux	54																							
56	X Final Submission of BHHRA WP to EPA/MDEQ	35 days	Mon 4/16/18	Fri 6/1/18	Roux	55																							
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58	X Draft BERA Work Plan to EPA/MDEQ	60 edays	Mon 9/18/17	Fri 11/17/17	Roux/EHS Support	44																							
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60	X Response to EPA/MDEQ Comments on BERA Work Plan	70 days	Mon 1/8/18	Fri 4/13/18	Roux	59																							
61	X Final Submission BERA Work Plan to EPA/MDEQ	35 days	Mon 4/16/18	Fri 6/1/18	Roux	60																							
62	Phase II Remedial Investigation Sampling and Analysis Plan	117 days	Tue 11/28/17	Wed 5/9/18	Roux																								
63	X Draft Phase II Sampling and Analysis Plan to EPA/MDEQ	67 days	Tue 11/28/17	Wed 2/28/18	Roux	51																							
64	EPA review of draft Phase II Sampling and Analysis Plan	25 days	Thu 3/1/18	Wed 4/4/18	EPA	63																							
65	X Response to EPA/MDEQ Comments on Phase II Sampling and Analysis Plan	15 days	Thu 4/5/18	Wed 4/25/18	Roux	64																							
66	X Final Phase II Sampling and Analysis Plan	10 days	Thu 4/26/18	Wed 5/9/18	Roux	65																							
67	South Percolation Pond Expedited Risk Assessment	115 days	Mon 10/30/17	Fri 4/6/18	Roux																								
68	South Percolation Pond Risk Expedited Risk Assessment Field Activities	10 days	Mon 10/30/17	Fri 11/10/17	Roux																								
69	Validation of South Pond Data	25 days	Mon 11/13/17	Fri 12/15/17	Data Validator	68																							
70	Completion of South Pond Risk Assessment Tech Memo	80 days	Mon 12/18/17	Fri 4/6/18	Roux/EHS Support	69																							
71	Phase II Remedial Investigation	131 days	Wed 4/25/18	Tue 10/23/18	Roux																								
72	Site Reconnaissance	3 days	Wed 4/25/18	Fri 4/27/18	Roux																								
73	Soil Borings with Geoprobe	15 days	Mon 4/30/18	Fri 5/18/18	Roux	72																							

Deliverable	Task Name	Duration	Start	Finish	Company	Predecessors	November 2017	December 2017	January 2018	February 2018	March 2018	April 2018	May 2018	June 2018	July 2018	August 2018	September 2018	October 2018	November 2018	December 2018	January 2019	February 2019	March 2019	April 2019	May 2019	June 2019	July 2019	August 2019	Ser
1	AOC is executed by all parties	1 day	Mon 11/30/15	Mon 11/30/15	EPA/CFAC																								
2	Historical Records Review	160 days	Mon 2/8/16	Fri 9/16/16	Roux																								
3	X Draft Health and Safety Plan (HASP)	30 edays	Mon 11/30/15	Wed 12/30/15	Roux	1																							
4	X Final Health and Safety Plan (HASP)	25 days	Thu 12/31/15	Wed 2/3/16	Roux	3																							
5	Site is clear of Snow / Field Work Begins	1 day	Mon 4/4/16	Mon 4/4/16																									
6	Pre-Intrusive Task 1 - Site Reconnaissance	10 days	Mon 4/4/16	Fri 4/15/16	Roux	5SS																							
7	Pre-Intrusive Task 2 - Geophysical Survey	5 days	Mon 4/18/16	Fri 4/22/16	Roux	6																							
8	Pre-Intrusive Task 3 - Soil Gas Survey	7 days	Mon 4/18/16	Tue 4/26/16	Roux	7SS																							
9	SAP Addendum	75 days	Mon 4/18/16	Fri 7/29/16	Roux																								
10	X Draft SAP Addendum	40 days	Mon 4/18/16	Fri 6/10/16	Roux	6																							
11	EPA Review of Draft SAP Addendum	15 days	Mon 6/13/16	Fri 7/1/16	EPA	10																							
12	X Final SAP Addendum	20 days	Mon 7/4/16	Fri 7/29/16	Roux	11																							
13	Source Area Investigation - Phase I Site Characterization Field Activities	120 days	Mon 5/9/16	Fri 10/21/16	Roux/Hydrometrics																								
14	GPR Utility Mark-Outs	5 days	Mon 5/9/16	Fri 5/13/16	Roux																								
15	Clearing / Grading for Drill Rig Access	4 days	Wed 5/11/16	Mon 5/16/16	Roux																								
16	Sonic Rig 1	75 days	Mon 5/16/16	Fri 8/26/16	Roux	8FS+10 days																							
17	Sonic Rig 2	50 days	Mon 5/16/16	Fri 7/22/16	Roux	8FS+10 days																							
18	Geoprobe	20 days	Mon 5/16/16	Fri 6/10/16	Hydrometrics	8FS+10 days																							
19	Landfill GPR Survey Field Work	3 days	Mon 7/25/16	Wed 7/27/16	Roux																								
20	Test Pitting	5 days	Mon 8/15/16	Fri 8/19/16	Roux																								
21	Additional Monitoring Well redevelopment activities	10 days	Mon 10/10/16	Fri 10/21/16	Hydrometrics																								
22	Background Area Investigation	5 days	Mon 6/13/16	Fri 6/17/16	Hydrometrics	18																							
23	Operational Grid Area Investigation	30 days	Mon 6/20/16	Fri 7/29/16	Hydrometrics	22																							
24	Site-Wide Surface Water Sampling - Event 1	5 days	Mon 9/5/16	Fri 9/9/16	Roux/Hydrometrics	16FS+5 days																							
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74																													